

CLAIMS

1. An injector for injecting fuel into combustion chambers of internal combustion engines, in particular a piezoelectric-actuator-controlled common rail injector, having control means (17), predominantly a piezoelectric actuator (13), that are deposited in an injector body (10) and via at least one booster piston (14) actuate a control valve (20) received in a valve plate (18); having a nozzle body (31), on whose (free) end toward the combustion chamber a nozzle outlet is embodied; having a nozzle needle (33), which is located axially movably and actuatably in a longitudinal recess (32) of the nozzle body (31); having a throttle disk (25), closing off the rear end (remote from the nozzle outlet) of the longitudinal recess (32) and located between the nozzle body (31) and the control valve (20), which throttle disk forms an opening stop for the nozzle needle (33), cooperates with the rear end face (remote from the nozzle outlet) of the nozzle needle (33) and thus limits the opening stroke of the nozzle needle (33); and having a control chamber (45), embodied between the rear nozzle needle end face and the throttle disk (25), which chamber is in hydraulic communication with a pressure connection (29) serving to deliver fuel, characterized in that a cylindrical retaining body (24) is disposed in the injector body (10) and receives the booster piston or pistons (14) and the valve plate (18) that contains the control valve (20).

2. The injector as defined by claim 1, characterized in that the valve plate (18) is fitted into a central axial bore (23) in the retaining body (24).

3. The injector as defined by claim 2, characterized in that a booster housing (11), which in a central axial bore (12) receives the booster piston or pistons (14) and a piezoelectric actuator (13), is disposed in the axial bore (23) of the retaining body (24), above the valve plate (18).
4. The injector as defined by claim 1, 2 or 3, characterized in that the retaining body (24) rests with its (lower) end face toward the nozzle body flatly and sealingly on an adjoining (upper) end face of the throttle disk (25).
5. The injector as defined by one or more of the foregoing claims, characterized in that the valve plate (18) is sealingly braced against the upper end face of the throttle disk (25) by a prestressing element (27).
6. The injector as defined by claim 5, characterized in that the prestressing element (27) that presses the valve plate (18) against the throttle disk (25) is braced on its back side on a shoulder (22) of the axial bore (23) of the retaining body (24), and thus is braced on the retaining body (24).
7. The injector as defined by claim 6 or 7, characterized in that the valve plate (18), on its (lower) end face toward the throttle disk, has an undercut (26), which serves to reduce the sealing area of the valve plate (18) with respect to the throttle disk (25).
8. The injector as defined by claim 5, 6 or 7, characterized in that a tube spring (27) serves as the prestressing element and is disposed in the axial bore (23) of the retaining body (24), here surrounding the booster housing (11) over part of its length.

9. The injector as defined by claim 5, 6 or 7, having a piezoelectric actuator (13) prestressed in the injector body (10) by a spring (16), characterized in that the prestressing spring (16) of the piezoelectric actuator (13) simultaneously serves as the prestressing element for the valve plate (18).

10. The injector as defined by one or more of the foregoing claims, characterized in that the booster housing (11) and the valve plate (18) form one integral component.